

REMARKS

I. Statement of Applicant Initiated Interview

On March 16, 2005, the undersigned initiated, on behalf of the applicant (Applicant's Representative), a pre-arranged interview with the Examiner of record, Theresa Trieu. In anticipation of the interview, the Applicant's Representative provided the Examiner with proposed amendments to Claim Nos. 1, 6, 61 and 99 and with reasons that the invention recited by Claim No. 11 are patentable over the cited prior art references. Each one of these claims was discussed during the interview. In addition to the references already made of record in the pending application, the Examiner discussed US Patent No. 2,477,002. The Examiner agreed with Applicant's Representative that Claim No. 11 as originally filed and Claim No. 61 with the proposed amendments define allowable subject matter over the cited references, including the '002 Patent. The reasons supporting the allowability of Claim Nos. 11 and 61, as well as Claim No. 2, are provided below as similarly provided to the Examiner. Applicant's Representative also agreed to further amend Claim Nos. 1, 6 and 99 to define the sealing relationship between the thread and the groove as corresponding with the cusp of the housing.

Applicant's Representative also provided the Examiner with proposed drawings and discussed corresponding specification amendments that would obviate the claim objections.

II. Allowable Subject Matter

In the Office Action dated January 12, 2005, the Examiner concluded that Claim Nos. 4, 5, 8-10, 15-22, 24, 26-29, 68-70 contain allowable subject matter and would be allowable if

rewritten in independent form including all of the limitations of the base claim and any intervening claims. For the reasons discussed below, Claim Nos. 15-22, 24 and 26-29 are also allowable because Claim No. 11, the independent claim on which these claims depend, is allowable as originally filed. The other independent claims from which these claims depend have been amended and, as submitted below, are also now directed to allowable subject matter.

Applicant appreciates the conclusion that Claim Nos. 31-47, 49-51, 53-60 are allowable as originally filed.

III. Election/Restriction

The Examiner concluded that the product and process claims in the present application are drawn to independent and distinct inventions and required applicant to elect claims to either the product or process under 35 U.S.C. §121. Applicant elected claims directed to the product, rendering the process claims to the non-elected invention (Claim Nos. 105-110) withdrawn from further consideration under 37 C.F.R. §1.142. In accordance with 37 C.F.R. §1.141(a) and MPEP §821.04, now that the Examiner has found a product claim to be allowable, applicant can amend the process claims to include all the limitations of the allowable product claim and the withdrawn process claims which will be rejoined. Accordingly, applicant has amended Claim No. 105 to include the allowable subject matter from the product claims and submits that the process claims should now be rejoined.

Additionally, in response to the restriction requirement, applicant had elected the species of Figures 8A-8D, 9, 10A-10D and 11A-11H. Applicant submits that the claims directed to the

non-elected species are in dependent form, depending on independent claims that are directed to the elected species. Therefore, applicant also submits that the claims directed to the non-elected species should also be reinstated in accordance with 37 C.F.R. §1.141(a) upon the allowance of the corresponding generic product claims.

IV. Amendment to the Specification & Corrected Drawings

The Examiner requested the cooperation of the applicant to correct any minor errors that may exist in the specification. Additionally, in objecting to the claims, the Examiner identified different terms shown on the drawings than used in the specification and claims. Accordingly, Applicant has prepared corrected drawings and revised the specification to provide more consistency between the drawings and the specification, particularly including the claims. Additionally, several other paragraphs have been updated and revised to correct other minor errors. Nine (9) replacement sheets are enclosed for Figures 1-5, 10a-10d and 18-22.

V. Amendment to the Claims

As discussed above, Claim Nos. 1, 6 and 99 have been amended to particularly recite the sealing relationship between the thread and the groove as corresponding with the cusp of the housing. Claim No. 99 has also been amended to recite an aspect of the non-intersecting sealing area. In particular, the non-intersecting sealing area extends between the male rotor and the female rotor from a seal between ridge of the groove and the root of the thread.

VI. Claim Rejections under 35 U.S.C. § 102(b)

The Examiner has rejected Claim Nos. 1-3, 6, 7, 11-14, 61-67, 87, 99 and 104 as being anticipated by U.S. Patent No. 5,554,020 (the Rao reference) under 35 U.S.C. §102(b). In support of this ground of rejection, the Examiner concluded that Rao discloses “a helical groove/thread” in which “the top land is in a first sealing relationship with the bottom land” and “the trailing face is in a second sealing relationship with the trailing ridge” and “the trailing edge is in a third sealing relationship with the trailing side” in addition to other sealing relationships.

A. Claim Nos. 1, 6 & 99

As discussed above, applicant has amended Claim Nos. 1, 6 and 99 to define the sealing relationship between the thread and the groove as corresponding with the cusp of the housing. Rao and the other prior art references fail to disclose or suggest this sealing arrangement in combination with the other features recited in the Claims. Accordingly, applicant submits that these claims should be allowed over the prior art references. Additionally, Claim Nos. 4, 5, 8-10, and 68-70, should also be allowed for the additional reason that they also contain allowable subject matter, as concluded by the Examiner.

B. Claim Nos. 2, 11 & 61

Applicant respectfully traverses the rejections of Claim Nos. 2 & 11 because Rao fails to disclose or otherwise teach the sealing region between the male rotor’s thread, the female rotor’s groove and the housing’s cusps. In rejecting these claims, the Examiner concludes that “the

trailing ridge and the trailing edge are in six relationship with each other" and that "the leading ridge and the leading edge are in seven sealing relationship with each other," however, Claim No. 2 expressly recites that the sealing relationship between the trailing ridge and the trailing edge is also with the front cusp and the sealing relationship between the leading ridge and the leading edge is also with the back cusp. Similarly, as expressly recited in Claim No. 11, the intermeshing sealing area extends continuously from the back intersection between the leading face, leading side, and back cusp to the front intersection between the trailing face, the trailing side and the front cusp.

Rao discloses sealing relationships only between the rotors but fails to disclose or otherwise suggest any sealing between either one of the rotors and the cusp of the housing. In comparison, the present invention recited by Claim Nos. 2 and 11 are directed to the sealing between both of the rotors in combination with the cusp of the housing. As discussed in the background section of the present application (pages 2-3), many prior art references actually suggest that this type sealing is not possible, indicating that the blow hole is a necessary leak pathway, and teach away from the long sealing line of the present invention as it extends continuously from cusp to cusp through the intermeshing thread and groove. For these reasons, applicant submits that Claim Nos. 2 and 11 are allowable over the prior art of record, including the Rao reference, and the rejection of these claims should be withdrawn. Claim No. 61 has also been amended to particularly recite the intermeshing sealing area extending between the cusps. Accordingly, applicant submits that Claim No. 61, as amended, is also allowable over the prior art of record.

VII. Conclusion

Applicant respectfully submits that the independent claims are allowable over the prior art of record, including the cited references. For similar reasons, and for the additional reasons set forth above, Applicant urge that the dependent claims are also allowable.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided. Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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